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EXAMINER

KNAUSS, SCOTT A

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,551

Applicant(s)

TAKANO ET AL.

Examiner

Scott A Knauss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

1. The applicants response filed 4/3/03 has been entered and carefully considered by the examiner. However, the examiner does not find the applicant's arguments to be persuasive. Therefore the action is made final.

Information Disclosure Statement

2. The references cited in the information disclosure statement have been considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1,3-7,9-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-278206 (Tanji et al.)

Regarding claim 1, Tanji discloses a branching method for an optical fiber cable, comprising cutting a desired optical fiber in the cable without cutting the cable in its entirety, at a non-terminal portion of the fiber, to form a terminal of the fiber.

Tanji further does not disclose the use of a cable having plastic fibers. Nevertheless, such cables are known in the art, and it would have been obvious to branch cables having different types of fibers within. Furthermore, it would be desirable to be able to branch a plastic optical fiber cable in a short distance fiber link. Therefore it would have been obvious to one of ordinary skill in the art to use the method of Tanji to form a post-branching connection to a plastic optical fiber cable.

Regarding claim 3, Tanji discloses that a fiber is cut, and then withdrawn from a cable (see fig. 1a)

Regarding claim 4, Tanji discloses the use of a cable #4 with a slotted spacer #10, and the desired cable is cut without cutting the spacer.

Regarding claims 5 and 6, Tanji discloses a cable with a tension member #12, and the fiber is cut without either deforming or cutting the tension member (See fig. 1)

Regarding claim 7, Tanji discloses a method of branching wherein the terminal is formed at an optional non-terminal position of an existing optical fiber cable.

Regarding claim 9, Tanji discloses that a fiber is cut, and then withdrawn from a cable (see fig. 1a)

Regarding claim 10, Tanji discloses the use of a cable #4 with a slotted spacer #10, and the desired cable is cut without cutting the spacer.

Regarding claims 11 and 12, Tanji discloses a cable with a tension member #12, and the fiber is cut without either deforming or cutting the tension member (See fig. 1)

Regarding claim 13, the terminal is formed while the cable is in an extended state.

Regarding claim 15, Tanji discloses that a fiber is cut, and then withdrawn from a cable (see fig. 1a)

Regarding claim 16, Tanji discloses the use of a cable #4 with a slotted spacer #10, and the desired cable is cut without cutting the spacer.

Regarding claim 17, Tanji discloses a cable with a tension member #12, and the fiber is cut without cutting the tension member (See fig. 1)

Regarding claim 18 Tanji discloses an optical fiber cable, wherein a desired optical fiber in the cable is cut, without cutting the cable in its entirety, at a non-terminal portion of the fiber, to form a terminal of the fiber.

Tanji further does not disclose the use of a cable having plastic fibers. Nevertheless, such cables are known in the art, and it would have been obvious to branch cables having different types of fibers within. Furthermore, it would be desirable to be able to branch a plastic optical fiber cable in a short distance fiber link. Therefore it would have been obvious to one of ordinary skill in the art to use the method of Tanji to form a post-branching connection to a plastic optical fiber cable.

Regarding claim 19, Tanji discloses an optical connection closure, #7, connecting a terminal of a branch-side optical fiber #1 branched from a branch-side optical fiber

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cable #4 with a terminal of a connect side optical fiber #51 withdrawn from a connect side optical fiber cable,

a branched portion of the branch side optical cable being one formed by cutting a desired fiber in the cable without cutting the cable in its entirety, to form a terminal of the optical fiber, the branch side optical fiber being the fiber having the terminal formed by cutting, the closure being located at the branched portion, and having an optical fiber connecting member (splice #6) to connect the terminal of the branch-side fiber with the connect side fiber.

Tanji does not, however, disclose having cable fixing members to hold each cable. Nevertheless, Tanji does show a pair of cables #4,#5 being held by the closure, and it would have been obvious to one of ordinary skill in the art to provide a fixing member such as a sleeve to hold the cables in place within the closure.

Tanji further does not disclose the use of a cable having plastic fibers. Nevertheless, such cables are known in the art, and it would have been obvious to branch cables having different types of fibers within. Furthermore, it would be desirable to be able to branch a plastic optical fiber cable in a short distance fiber link, since plastic fibers are more easily bent and are suitable for short distance optical transmission. Therefore it would have been obvious to one of ordinary skill in the art to use the method of Tanji to form a post-branching connection to a plastic optical fiber cable.

Regarding claim 20, Tanji, as modified discloses a cable in figs. 3 and 4 having a tension member #12, and discloses a closure which holds, via fixing members, a cable in an extended state without substantially elastically deforming the tension member.

6. Claims 1,2,7,8,13,14 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 01-310305 (Aizawa et al).

Regarding claims 1,2,7,8,13,14 and 18 Aizawa discloses a method of forming a post branching juncture while a cable is in an extended state (see figs. 1 and 2, abstract), wherein a fiber core is lead out of the cable (see fig. 1) and then cut (see abstract) without cutting the cable in its entirety, at a nonterminal position of the cable to form a terminal of the fiber (see fig. 2).

Aizawa also does not disclose the use of a cable having plastic fibers. Nevertheless, such cables are known in the art, and it would have been obvious to branch cables having different types of fibers within. Furthermore, it would be desirable to be able to branch a plastic optical fiber cable in a short distance fiber link. Therefore it would have been obvious to one of ordinary skill in the art to use the method of Tanji to form a post-branching connection to a plastic optical fiber cable.

Regarding claim 19, Aizawa discloses an optical connection closure, in figure 2 for connecting a terminal of a branch-side optical fiber #6 branched from a branch-side optical fiber cable #2 with a terminal of a connect side optical fiber #8 withdrawn from a connect side optical fiber cable #75,

a branched portion of the branch side optical cable being one formed by cutting a desired fiber in the cable without cutting the cable in its entirety, to form a terminal of the

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optical fiber, the branch side optical fiber being the fiber having the terminal formed by cutting, the closure being located at the branched portion, and having an optical fiber connecting member (splice #9,#10) to connect the terminal of the branch-side fiber with the connect side fiber and having branch-side and connect-side cable fixing members #15.

Aizawa does not disclose the use of a cable having plastic fibers. Nevertheless, such cables are known in the art, and it would have been obvious to branch cables having different types of fibers within. Furthermore, it would be desirable to be able to branch a plastic optical fiber cable in a short distance fiber link. Therefore it would have been obvious to one of ordinary skill in the art to use the method of Tanji to form a post-branching connection to a plastic optical fiber cable.

Regarding claim 20, the cable fixing members hold the branch-side cable member (which has tension member #16 – see figs. 3,4) in an extended state without substantially elastically deforming the tension member.

Remarks

7. The applicant has traversed the examiner's rejection based on Tanji and Aizawa by arguing that neither Tanji or Aizawa teaches the use of plastic optical fibers, and that there is no suggestion in Tanji or Aizawa to use plastic optical fibers.

However, upon consultation with a translator, it was found that neither Tanji nor Aizawa limit the type the fiber to be used in the cables and branched, and furthermore, the examiner repeats the assertion that cables using plastic fibers are known in the art, and in response to the examiner's arguments, cites (but does not rely upon) US

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4,458,986 (Yuto et al), US 4,762,392 (Yamamoto et al) and US 6,476,951 (White).

Each of these references clearly show fiber optic cables using plastic fibers, and also disclose the advantages of such fibers. Yuto, in particular, discloses in col. 1, lines 5-20 the advantages of such fibers, including: greater bend resistance, greater impact strength, greater ease of handling, and high bonding efficiency at connector portions thereof, and is thus highly desirable for short distance fiber links (see lines 18-20).

Thus, the examiner believes it would have been quite obvious to one of ordinary skill in the art to substitute such plastic fibers into the branching arrangements and cables disclosed by Tanji and Aizawa in order to provide short distance fiber links which have greater flexibility and ease of handling. Furthermore, it would also have been obvious to one of ordinary skill in the art to apply the methods of Tanji and Aizawa to known optical cables, including those with plastic optical fibers, in order to provide branched optical connections.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-6 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss

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sak
April 25, 2003



HEMANG SANGHAVI
PRIMARY EXAMINER